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Teachers and School Personnel as First Responders following Disasters: Survivors and Supporters

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Abstract

Many teachers and school personnel work in the communities in which they live and following disasters and are often dealing with the same recovery issues as students. These individuals may be among the first to respond directly to students' emotional needs at the same time as they must process their own losses and stressors. The purpose of this study is to understand the contributors to and levels of posttraumatic stress symptoms in a group of teachers and school personnel following Hurricane Katrina. The study included 495 teachers and school personnel (support staff, counselors, and administration) at schools throughout Southeast Louisiana. Surveys were requested by school administration and collected anonymously during staff meetings from December 2006 to September 2007. The majority of participants reported that their homes sustained reparable flood and/or wind damage; however almost one-quarter of the participants had uninhabitable homes. Approximately 25% of the participants had significant symptoms for PTSD and depression. Results suggest that age, previous trauma, Hurricane experiences, current alcohol use, and partner conflict significantly predicted posttraumatic stress symptoms. Results also suggest that previous trauma, hurricane experiences, and partner conflict significantly predicted depression. Findings indicated that for teachers in the present study approximately one-quarter struggled with PTSD (24%) and depression (25%) symptoms following Hurricane Katrina. To assist these individuals with supporting youth during disaster recovery, services must be made available to meet these non-traditional first responders' emotional needs. In future disaster planning, it is imperative to focus on building teacher and staff supports through school and community activities and developing collaborations with local behavioral health resources and providers.

Keywords

Teachers; First responders; Disaster; Posttraumatic stress

Introduction

For many students school provides an environment not only for the development of academic skills but also for developing social supports through relationships with peers and teachers. This is also true following disasters when school can provide structure and safety during recovery. Unlike adult populations, child and adolescent populations are often easier to locate after a disaster due to the concentration of this group in school settings [1,2]. A primary concern for schools in disaster recovery zones is resuming education as soon as possible; however, supporting the mental health needs of their student population is also recognized as crucial. Schools are also frequently called upon in disaster recovery situations to provide mental and behavioral health services due to the natural fostering of supportive relationships with classmates, teachers, and school staff [3-5]. According to the UNICEF [6] teachers guide to supporting children after disasters, worldwide teachers' play three crucial disaster response roles, which include: 1) self-care to understand their own disaster response concerns; 2) emerging as a team member, within a social network of community responders; and 3) leadership by serving as a link between the students, parents and the larger community. However these roles are often required to be filled without proper resources or disaster mental health training [7].

Hurricane katrina

In August of 2005, Hurricane Katrina devastated the United States Gulf Coast; high winds, heavy rains, storm surges, followed by massive flooding caused by levee breaches, resulted in one of the deadliest and costly hurricanes in US history (Knabb et al., 2006). Hurricane Katrina caused unprecedented personal and community devastation, including displacement of entire neighborhoods, families and communities, property destruction, and financial loss to those living along the Gulf Coast. In the state of Louisiana, over 1,500 deaths were linked to Hurricane Katrina [8]. More conservative estimates include 986, with 2.3% of those being children under the age of 18 [9]. In addition over 875 schools were damaged, with over 40 totally destroyed [8]. Consistent with studies of other natural disasters, common adult and child reactions following Hurricane Katrina include posttraumatic stress, anxiety, and depression [10-19]. Level of symptomatology is associated with presence of physical injury, fear of death, personal and economic loss, proximity to the event, displacement, a lessened sense of self efficacy or control, lack of knowledge about coping with the crisis, and a relative lack of family and community support [20-24]. Hurricane Katrina caused a great deal of loss for communities and recovery efforts continue even a decade after the storm.

The role of first responders

Disasters that cause as much human suffering as Hurricane Katrina often require the expansion of the definition of first responder. Technically there is no legal definition of first responder, but general consensus is, "those who would be the first to respond in the case of a natural or manmade disaster or emergency," [25] and often assume law enforcement, fire, and emergency medical personnel. However for federal funding requirements, these are now referred to as emergency response providers or certified first responders. A more specific definition, directly tied to post-disaster funding streams, has been necessary due to the number of atypical professions required to provide some sort of response following large scale terrorist attacks, war, and natural disasters [25,26]. The certification denotes training received to manage crises and preparation to work in difficult, life-threatening situations.

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Even with adequate training in crisis intervention, studies have shown that traditional first responders, (i.e., police, fire, medical, city workers) continued to experience posttraumatic stress or depression symptoms 18 months after Hurricane Katrina, which highlights the intensity of the experiences for this group of individuals [27]. Research on first responders has documented their vulnerability to symptoms such as hypervigilance, social isolation, sadness, irritability, anxiety, poor concentration, and sleep difficulties [28]. For first responders, the effects of the traumatization, including possible injury to self, caused by the disaster [29] is compounded by prior trauma exposure and vicarious traumatization related to constant exposure to the trauma of those they are helping. If left symptoms are left untreated potential outcomes include longer-term mental health effects, loss of job performance, burnout, employee turnover, and family/home life disruption [Centers for Disease Control, 2012]. First responders are also faced with personal pressures related to separation from their family, worry about their safety and well-being, and personal loss [30-32]. However, first responders can also possess a unique strength to managing adversity because of the challenges they face on a regular basis [33].

Teachers and school personnel following disasters

Given that basic needs such as food and shelter are prioritized, the school environment may be one of the first places available that can respond directly to students' emotional needs. Since teachers and school personnel spend a significant amount of time with children during the school year, they may be among the first people to notice changes in students' behavior or emotional states following traumatic events. The quality of the relationship between a student and a teacher can also be predictive of academic and behavior outcomes through elementary school; therefore, it is imperative that students feel supported by their teachers [34]. Following Hurricane Andrew in 1992, children reported that they received more coping assistance from parents and friends rather than from teachers [35]. The authors suggest that these finding may be due to many teachers' themselves also surviving the hurricane and trying to, "avoid arousing disturbing emotions," for the students (p. 472). However with the magnitude of events such as Hurricane Katrina, and after other devastating events, communities do not have the necessary infrastructure and displacement can separate children from supportive family members and friends. Thus, child and adolescent survivors may receive insufficient attention from overwhelmed caregivers as well as other recovery related issues [36,37]. Teachers and school personnel can be among the most effective providers in helping children to overcome a traumatic event if they are trained and have the skills to do so [38].

Training programs for teachers and staff

Following a disaster, teachers find themselves fulfilling additional supportive roles for students beyond their traditional duties. However, they may not be provided with the resources needed to be able to meet the unique challenges faced in schools following disasters, especially in large-scale disasters such as Hurricane Katrina. Even though teachers may be seen as individuals who are accustomed to managing challenging situations in the classroom, many have reported that they do not always feel capable and confident in helping a student manage emotional stressors following a traumatic event [39]. More specfically, some teachers feel that they lack the knowledge and skills necessary to support a student who has experienced a traumatic event and also report difficulty in managing the emotional strain that these demands place on them [40].

Over the past decade, several international training models have been created to provide teachers with the skills necessary to assist children, and often themselves, in the aftermath of a disaster [41-46]. These programs are usually implemented after a traumatic event has occurred, but many note the importance of disaster preparedness training [47]. A few training programs selected for their relevance to mental health interventions, self-care, and Hurricane Katrina are described below.

One such program created to train teachers and mental health workers following disasters is Helping the Helpers. Helping the Helpers was implemented in Thailand, Phuket following the devastating Tsunami in December 2004 [41]. This program includes both theory and experiential activities to serve the community in need and can be implemented after a disaster occurs. The aim of the program was to provide healing through creative mind-body coping skills and to train teachers and mental health workers to provide disaster intervention techniques to communities in need. Individuals who participated in the training reported experiencing trauma reactions six months after the event as well as intermittent feelings of being helpless and wanting to rescue those in need. After the training was complete, the helpers were able to find a sense of normalcy in their routines, which helped them to cope with the losses in their communities.

Psychological First Aid in Schools [44] was adapted from Psychological First Aid [43]. PFA for Schools is a modular, evidence-informed intervention developed for anyone responding in the acute aftermath of a disaster or act of terrorism. It consists of 8 Core Actions that a responder may implement to support a surivor including: Contact and Engagement, Safety and Comfort, and Stabilization. PFA for Schools works with the specific needs and strengths of post-disaster response in the school setting and its aim is to foster natural supports and healthy coping skills in survivors after a traumatic event. It is strength-focused, and works by identifying effective coping already present in the survivor. These skills are enhanced through brief psychoeducation and linkage with natural support systems and available supportive resources. PFA for Schools addresses basic needs first, for example, making contact with the survivor in a supportive manner, and establishing or enhancing safety and comfort through simple acts such as providing a blanket, a toy or water. Psychological First Aid (2006) was just being released when Hurricane Katrina occurred and one of its authors, Dr. Brymer, traveled to New Orleans to provide guidance to our clinicians on implementing the model on the cruise ships that housed the city's first responders and their families. It proved an invaluable resource in supporting the resilience of these families.

Baum et al. [42] discuss a similar program that was implemented in Biloxi, Mississippi one year after Hurricane Katrina. The Building Resilience Project is a teacher-based intervention that provides teachers with the tools to cope with their own stressors while also managing those of their students following disasters. The study included post workshop self-report evaluations from 21 teachers who participated in the Building Resilience Project. Following the intervention, teachers' confidence in handling children's emotional reactions improved as well as their ability to be empathic and openly discuss feelings.

While a number of programs implemented by teachers have been found to be effective at reducing symptoms of PTSD in children, many fail to acknowledge the needs of the teachers in disaster recovery [48,49]. Teachers receive extensive training in how to provide academic instruction to students; however many are not formally

prepared for a crisis or disaster in the same way that a first responder is trained. The purpose of this study is to understand the contributors to and levels of posttraumatic stress symptoms in a group of teachers and school personnel (support staff, counselors, and administration) following Hurricane Katrina. It was hypothesized that teachers and school support staff would exhibit high levels of post disaster mental health symptoms; and that these symptoms would be associated with their personal disaster experiences. Two case studies will also be presented that provide examples of the dual role of survivor and supporter that many teachers played following Hurricane Katrina.

Methods

In order to learn how best to support school staff after Hurricane Katrina, surveys were requested by school administration and collected anonymously from December 2006 to September 2007 at schools throughout Southeast Louisiana. Teachers and school personnel were surveyed based on their availability at in-service meetings. The purpose of the screenings was explained to potential participants and participation was voluntary. Once the survey was completed, each participant was provided opportunities to speak privately with a clinician and was given a list of referrals for clinical services. The research protocol was approved by the Louisiana State University Health Sciences Center Institutional Review Board; referral sheets were provided to all participants and mental health professionals were available to individuals interested in receiving services. Researchers have complied with APA ethical standards in the treatment of human participants.

Measures

The survey utilized was adapted from one used by the Centers for Disease Control and Prevention (CDC) following the World Trade Center Attacks and with fire fighters and police officers following Hurricane Katrina [50,51]. Items were selected based on relevance for mental health purposes, and additional items were added related to alcohol use and partner conflict. The survey consisted of questions regarding traumatic experiences, alcohol use, partner conflict, post-traumatic stress, and depression. To assess hurricane experiences and traumatic experiences, *yes*/*no* responses were collected on the following questions: witnessed injury or death; damage to home; home uninhabitable; injury or death of a friend; injury or death of family; personal serious injury; housing others due to hurricane; and previous loss or trauma. An index was created where one point was given to endorsement for the following hurricane experiences, with the minimum score of 0 and the maximum of 8. To measure alcohol use, participants responded to questions regarding their amount of drinking before the hurricane and current drinking patterns. Partner conflict was rated on a 10 point scale before and after the hurricane.

The PTSD Checklist Civilian Version, (PCL-C), was created by Weathers, Huska, and Keane [52] at the Boston National Center for PTSD – Behavioral Sciences Division [53]. The PCL-C includes 17 items which respondents rate on a 5 point Likert scale ranging from 1 *not at all* to 5 *extremely*. The PTSD severity cut-off score of 35, which has been used in military studies, was employed [54].

The depression measure, the Center for Epidemiological Studies Depression Scale – Short Form [55] has 10 questions and uses a 4 point Likert type scale ranging from 0 *rarely or none of the time* (<1 day during the past week) to 3 *most of the time* (5-7 days during the past week). Scores of 10 or higher indicates symptoms of depression. The PCL-C and CESD have been used following disasters and are well-validated instruments [56].

Data analysis

Data were analyzed using SPSS version 22. Preliminary analyses (Pearson Product Moment Correlations and Point biserial Correlations) were conducted to test associations among study variables, and appropriateness for inclusion in model testing. Descriptive statistics (means/standard deviations and frequencies/percentages) were calculated to test levels of post disaster mental health symptoms. Two multiple linear regressions, using enter method, were conducted to test the degree to which disaster experiences predict post disaster mental health to describe examples of the dual role of survivor and supporter that many teachers played following Hurricane Katrina.

Participants

A total of 495 teachers and staff completed the survey. The mean age of participants was 43.2 (*SD*=11.0) and 87% were female. Current Parish (county) residence included: 28% Orleans, 24% Plaquemines, 10% Tangipahoa, 9% St. Bernard, 6% Washington, 15% Jefferson and 6% outlying parishes. Surveys were collected at public schools in the following parishes (counties): 43% Orleans, 61% Plaquemines, and 10% St. Bernard. The majority of respondents were teachers 72.7%, 17% were support staff, 6% were counselors, and 3% were administration. The minimum number of hours worked per week was 7.5 and the maximum was 105 (*M*=40.04, *SD*=7.56)

Results

Participants who were surveyed reported experiencing a multitude of significant losses and stressors. The majority reported that their homes sustained reparable flood and/or wind damage (58%), 24% had uninhabitable homes and 18% reported no damage. The question was asked, to what extent did you stay in touch with your family: 11% reported rarely, 13% occasionally, 12% sometimes, 19% fairly often and 45% very often. Table 1 details the percentage who experienced hurricane-related experiences and previous trauma. Approximately one-quarter of the participants met the scale criteria for PTSD (24%) and depression (25%).

Ten percent reported an increase in frequency of alcohol consumption, 5% reported a decrease and 85% reported no change. A paired sample t-test was conducted and revealed a mean increase in alcohol consumption, t (474)= -2.81, p<0.01, from pre-hurricane (*M*=1.10, *SD*=0.05) to post hurricane (*M*=1.18, *SD*=0.05). Increase in partner conflict was also a commonly endorsed symptom of distress; 26% reported an increase, 8% reported a decrease, and 66% reported

Table 1: Frequency and Percent Hurricane Experiences and Previous Trauma.

Type of Hurricane Losses and Trauma	N	%
Witness Injury or Death	25	5%
Damage to Home	408	82%
Injury of Friend	92	19%
Death of Friend	99	20%
Injury to Family Member	30	6 %
Death of Family Member	19	4%
Personal Serious Injury	5	1%
House family members or guest following the hurricane	119	24%
Previous Loss or Trauma	145	29%

Note: Participants were allowed multiple responses. A Hurricane Katrina Experiences index was created where one point was given to endorsement for the above experiences, with the minimum score of 0 and the maximum of 8 (*M* = 1.6, *SD* = 1.2).

no change. A paired sample t-test was conducted and revealed a mean increase in alcohol consumption, t (429)=-5.91, p<0.001, from pre-hurricane (M=2.93, SD=0.10) to post hurricane (M=3.45, SD=0.12).

Table 2 presents the correlation matrix for the study variables. Age was positively associated with a history of previous trauma, Hurricane Katrina experiences, depression and PTSD. Reporting male gender was positively associated with hours worked per week and prior and current alcohol consumption. Previous trauma was associated with prior and current partner conflict, depression and PTSD. Prior alcohol use was positively associated with current alcohol, prior and current partner conflict. Current alcohol consumption was associated with prior and current partner conflict, depression and PTSD. Post and prior partner conflict was associated with depression and PTSD.

Two multiple linear regressions were conducted to assess if age, previous trauma, Hurricane Katrina experiences, current alcohol use and post partner conflict predict depression and PTSD. Due to the high association with post partner conflict and to avoid collinearity, pre-partner conflict was not included; all other assumptions were met.

Results of the regression predicting PTSD was significant, F (5, 392)=39.67, p<0.001, R^2=.336. For every one unit increase in Hurricane Katrina experiences, PTSD scores increase by 2.96 units. For every one unit increase in current alcohol use, PTSD increases by 1.16 units and for every one unit increase in post partner conflict, PTSD increase by 1.68 units. As individuals tend to have experienced a previous trauma, PTSD scores increase by 5.26 units.

Results of the regression predicting depression was significant, F (5, 396)=30.66, p<0.001, R^2=.282. Beta coefficients are presented in Table 3, where for every one unit increase in Hurricane Katrina experiences, depression scores increase by 1.18 units. For every one unit increase in post partner conflict, depression scores increase by 0.99 units and as individuals tend to have experienced a previous trauma, depression scores increase by 2.28 units.

Case study

To illustrate the experience that many teachers had following Hurricane Katrina, we will outline the story of two teachers *Teacher A* and *Teacher B*. These case studies were selected based on teachers' availability to provide consent and their ability to demonstrate examples of the dual role of survivor and supporter that many teachers played following Hurricane Katrina. Similar stories could be heard from many other individuals in this area.

Teacher A: *Teacher A* evacuated out of state before Hurricane Katrina made landfall, the school where she had taught for many years was devastated and rendered uninhabitable due to flooding. When *Teacher A* discovered that her family home was destroyed, they relocated to a different part of the state. *Teacher A* kept in touch with her prior school administration, in hopes to return as soon as it reopened. Less than six months after the storm *Teacher A* secured one of the limited positions in her prior school district, which reopened to serve a reduced number of students returning back to the community. To live within commuting distance of her previous

Table 2: Correlation Matrix.

	M	*SD*	Gender	Hours work per week	Previous Trauma	Hurricane Katrina Experiences	Prior alcohol	Current alcohol	Prior partner conflict	Post partner conflict	CESD	PTSD
Age	43.2	11.0	0.08	0.02	0.15**	0.18**	-0.09	-0.04	0.01	0.05	0.13**	0.17**
Gender	0.1	0.4	--	0.12**	-0.06	0.03	0.09*	0.09*	0.12*	0.05	0-.02	-0.03
Hours work per week	40.1	7.6	--	--	-0.01	-0.04	0.05	0.01	-0.02	0.03	0.01	0.05
Previous trauma	0.3	0.5	--	--	--	0.06	-0.02	0.01	0.10*	0.10*	0.26**	00.30**
Hurricane Katrina Experiences	1.6	1.2	--	--	--	--	-0.12*	-0.06	0.08	0.17**	0.28**	0.37**
Prior alcohol	2.1	1.1	--	--	--	--	--	0.89**	0.15**	0.11*	-0.01	0.01
Current alcohol	2.1	1.2	--	--	--	--	--	--	0.16**	0.14**	0.10*	0.14**
Prior partner conflict	2.9	2.1	--	--	--	--	--	--	--	0.72**	0.32**	0.32**
Post partner conflict	3.5	2.6	--	--	--	--	--	--	--	--	0.46**	0.45**
CESD	5.8	7.0	--	--	--	--	--	--	--	--	--	0.86**
PTSD	27.6	12.7	--	--	--	--	--	--	--	--	--	--

Note: CESD=Center for Epidemiology Scale for Depression, PTSD=Posttraumatic stress disorder, Gender, Male=1, Female=0.

Table 3: Beta Coefficients Predicting PTSD and Depression.

Outcome Variables	Predictors	B	SE	β	t	Sig.
PTSD						
	Age	0.10	0.05	0.089	2.11	0.036
	Previous trauma	5.26	1.13	0.194	4.65	0.001
	Hurricane Katrina Experiences	2.96	0.46	0.277	6.49	0.001
	Current alcohol	1.16	0.45	0.108	2.59	0.010
	Post partner conflict	1.68	0.20	0.354	8.31	0.001
Depression						
	Age	0.04	0.03	0.065	1.48	0.139
	Previous trauma	2.28	0.64	0.155	3.57	0.001
	Hurricane Katrina Experiences	1.18	0.26	0.204	4.60	0.001
	Current alcohol	0.41	0.25	0.071	1.63	0.103
	Post partner conflict	0.99	0.11	0.385	8.71	0.001

school, *Teacher A*, spouse, and children moved in with family—a total of ten people sharing a house. Shortly after they found a place to rent, but did not have any furniture. They sat on folding chairs and slept on air mattresses. *Teacher A* reported that her family lived in seven different locations within the year following Katrina. Due to work obligations, *Teacher A*'s spouse was away from the family a great deal of the time, leaving *Teacher A* to fulfill the role of primary caretaker for their children. *Teacher A*'s child was severely traumatized by the hurricane, often making her late to work because of the child's difficulties. *Teacher A* often felt overwhelmed and exasperated trying to balance personal responsibilities and professional work. Despite personal struggles, *Teacher A* regularly attended work and felt supported by the administrators, as they allowed flexibility to address personal matters, such as calling the Federal Emergency Management Association (FEMA), insurance companies, and loan companies in order to get his home life in order. Teachers also provided a supportive network for each other and lunch was often like a group session with discussions on recovery experiences.

Teacher A's classroom was located in a temporary trailer; with such extensive infrastructural damage, schools often set up classes in trailers while the main buildings were being repaired or built. Classroom size was rather fluid and within two months her class size had doubled to over forty students, adding two students to his roster daily. The classroom environment was very atypical, with no playgrounds, limited space, and mainstreamed. There were no records that documented students' academic or behavioral needs because most records had been destroyed in floodwaters. *Teacher A* found the students, as a whole, to be quite different from previous students that she had taught. For example, students of all ages spontaneously hugged the teachers, became tearful very easily without a particular reason, quickly ate every meal they were provided, and often asked questions about hurricanes. In addition, many children were living in campers and did not always have clean uniforms due to the lack of washing machines; some drove an hour to get to school. The students appeared to enjoy the normalcy of class activities, such as games and reading books. *Teacher A* did everything that she could to make the students feel safe, but realized that her teaching degree did not prepare her for how to deal with students emotional needs to this extent. All of the teachers, staff, and administrators, despite being survivors themselves, tried to make the children feel comfortable and went above and beyond to make the school a positive environment. *Teacher A* noted that the students excelled even under crowded conditions, and they were happy to be learning with their friends. *Teacher A* continues teaching and stated that it was quite a journey that year, and she appreciates all that she has today even more because of adversity. She stated, "Katrina made us strong."

Teacher B: *Teacher B* was referred for school based services by a school principal. *Teacher B* and family were displaced for two months following Hurricane Katrina. Upon return to their destroyed home, they lived in temporary housing on the property while rebuilding. In addition to being directly impacted by the hurricane, the family had experienced an unexpected and devastating loss weeks prior to Hurricane Katrina. At intake, *Teacher B* presented with significant symptoms of depression and posttraumatic stress symptoms including disturbed sleep and nightmares, poor appetite with weight loss, as well as feelings of guilt, irritability, and lack of interest and energy to work. In addition, *Teacher B* described increased spousal discord with her husband whom she described as "disconnected" and obsessively focusing all free time on rebuilding their home. Despite these significant emotional difficulties, *Teacher B* insisted that she was "fine" noting she had good social support from her co-workers and school administration. However, she did agree to follow up with ongoing mental health services, with the understanding that it would better assist her in supporting her traumatized family.

Once *Teacher B* overcame her initial resistances to treatment and recognized that self-care was also important. She also agreed to add concurrent medication management of her significant anxious/depressed symptoms and was initially treated by a school-based psychiatrist until eventually transferring treatment to her primary care physician. In addition, *Teacher B* continued counseling sessions through the remainder of the school year where she was met periodically with her husband. Both later agreed to initiate couple's counseling at a local agency outside of the school setting. At termination of treatment, less than one year following Hurricane Katrina, *Teacher B* no longer met cut-off for posttraumatic stress disorder. Her affect brightened considerably and she expressed gratitude to her co-workers while also crediting her students with "giving me strength and a sense of purpose" allowing her to continue her efforts as an educator. In addition, *Teacher B* spearheaded a campaign to create a resilience memorial representing the community's recovery from Hurricane Katrina. *Teacher B* revealed that she continues to teach in the local school system and currently lives in the home they rebuilt after Hurricane Katrina.

Discussion

Teachers and school personnel often find themselves in the dual role of survivor and supporter following disasters because often they live in the same community where they work and, therefore, also experience the disaster. Many teachers and staff affected by Hurricane Katrina were trying to be a supportive presence to students who were returning to school at the same time as they were dealing with their own hurricane-related experiences and personal losses. Specifically within the current sample, 82% reported damage to their house and approximately 20% experienced the death or injury of a friend. While some maintained habitable homes, their living arrangements were still in recovery mode, as 20% housed guests due to the storm. Lastly, almost 30% were also dealing with previous experiences of loss or trauma (29%). As described above, teachers found themselves in the role of supporter for students, while trying to manage their own recovery needs. The case example of *Teacher A* clearly depicts the dual roles (survivor and supporter) that teachers played, and the important supports that teachers provided to students in a post disaster environment. The case example of *Teacher B* delineates the mental health needs experienced by those who occupy this dual role, and how treatment can help them be stronger in order to be a support for their students.

Findings acknowledge that many teachers struggled with PTSD and depression symptoms in the aftermath of Hurricane Katrina, with some meeting criteria for severe trauma symptoms. Although resilient and hardworking, teachers in the present study have an expectable incidence of PTSD symptoms (24%) and an even higher incidence of symptoms of depression (25%). The overall percentages from this study are similar to those of first responders after the Oklahoma City Bombing and World Trade Center Attacks which ranged from 6-17% for PTSD and 22% for depression [57-61]. Data also revealed self-reports of increased alcohol use (10%) and partner conflict (26%). Importantly Hurricane Katrina experiences, partner conflict, and previous trauma predicted both depression and PTSD. These findings highlight the need for mental and behavioral services to be made available to meet the emotional needs of school personnel following disasters and major traumatic experiences [61].

This study has many strengths in describing the effects of Hurricane Katrina on school personnel, however, there are unavoidable limitations related to difficulties in assessing individuals in a post-disaster environment. These limitations related to representation, sampling and generalizability of the findings. Due to the fluid population at this time, it is not possible to provide an accurate estimate of the population. Similarly, the option of self-selection could have introduced bias to the overall sample. Limitations of the current study also include the cross-sectional design of the study and the convenience sampling. Consistent with disaster research [36], the lack of pre-disaster knowledge is also a limitation. In addition, the majority of respondents were teachers; school support staff may have differing experiences and were underrepresented. While the percent of variance accounted for is acceptable for social sciences, there is a large amount of variance still unknown—future research on teachers post disaster would benefit from inclusion of other variables, such as a proxy for pre-disaster mental health. Future research should also seek to understand the connection of concerns for student well-being and how these impact teacher/school staff recovery and their own personal well-being. Finally, further research is also needed on identifying protective factors that foster resilience.

A number of important lessons have been learned from Hurricane Katrina with its devastation and resulting slow recovery. Results of the current study indicate that the severity of the traumas experienced both from the impact of Hurricane Katrina, prior traumas, and subsequent recovery has important mental health implications. In future disaster planning, it is crucial not only to support parents, caregivers, and students, but also to focus on building teacher/school staff supports through school and community based services. Although training programs for teachers exist and can be effective at building coping skills in teachers and students, the community needs to be prepared with the more supports in place prior to a disaster. Regular training in disaster response dynamics and interventions, and self-care practices should also play a part in school disaster planning curricula and funding needs to be made available for such training. While we have selected teachers to highlight in this study, consideration should be given to extending the availablity of training and support to all non-traditional responders that provide care for children post disaster. The community needs to be recognize and be prepared with the proper supports for teachers and school personnel and the dual role they play as supporters and survivors following disaster and traumatic events.

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